

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking                    )  
Regarding Broadband Infrastructure            )  
Deployment and to Support Service            )  
Providers in the State of California.        )

Rulemaking No. 20-09-001

**LCB COMMUNICATIONS LLC (U-7243-C) AND  
SOUTH VALLEY INTERNET INC.  
COMMENTS ON MIDDLE MILE ISSUES**

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**I. Introduction**

LCB Communications LLC (U- 7243 –C) (“LCB”) holds a Certificate of Public Convenience and Necessity in the State of California, and is an active CLEC working within the state. South Valley Internet Inc. (“SVI”) is one of the oldest Internet Service Providers (“ISPs”) within the State, providing voice and data services to the South Santa Clara and San Benito Counties. Our company mission is to serve rural customers with fast Internet. Together, LCB and SVI successfully utilized a CASF grant to service over 130 underserved homes in South Santa Clara County with gigabit Internet and voice services via Fiber to the Home (“FTTH”). LCB and SVI would like to extend our FTTH footprint outwards, but a consistent problem has been getting affordable middle-mile access to areas with unserved communities.

On behalf of both companies, we respectfully submit the following comments in regard to the Assigned Commissioner’s Ruling, dated August 6, 2021 (“Ruling”), regarding Senate Bill (SB) 156 with respect to recommendations for the location of an open-access middle mile broadband network throughout the state.

## **II. General Response to the Proposed Middle Mile Network**

LCB and SVI are strongly in favor of an open access middle-mile network throughout the state of California. Parts of Santa Cruz County, our neighboring County to the west, has an open middle-mile network that is being used by a variety of Internet service providers. This open access middle-mile network is clearly aiding in the elimination of the Digital Divide in Santa Cruz County. Unfortunately, middle-mile facilities traversing South Santa Clara and San Benito Counties are privately-owned and they do not offer either sufficient capacity or affordable rates. This is an area of great frustration for our companies.

**As an opening statement, a key factor for the success of a statewide middle-mile network is the principal of open access for that network.** With limited middle-mile network available, growth and services faster than 30 Mbps. in rural and heavily wooded areas is nearly impossible to accomplish at this time, and so we eagerly would welcome such a middle-mile network in our area to reach many pockets of unserved or underserved consumers. The irony is many of these consumers work in nearby Silicon Valley, yet they are unable to access a modern network to perform their tech industry work.

We believe that the proposed statewide middle-mile network in Senate Bill (SB) 156 will significantly help reduce the very real Digital Divide within South Santa Clara and San Benito Counties. In addition, this new infrastructure will ensure that future demand for broadband will be attainable in the near- and long-term future, not only for those who live in urban California, but also for those people who choose to live in the suburban and rural areas of the State.

## **III. Response to Current Proposed Middle-Mile Map**

With respect to the “Anchor Build Fiber Highways” map referenced in the Ruling at page 4, LCB and SVI would like to provide the following comments:

- Open Access Mandate: LCB and SVI advocate for the entire statewide middle mile network to be subject to an open access mandate to all providers in a

nondiscriminatory fashion. It should not favor any one company or technology over another.

- **Dark Fiber:** We believe that a true open access network will only offer dark fiber leases.
- **Affordable Rates:** Rates should be affordable; this is a huge issue at present.
- **Complete Coverage is Required in Unserved and Underserved Areas:** Building middle-mile infrastructure purely along the state highway system, although understandable, will **not** enable coverage of all of the under and unserved areas within the South Santa Clara and San Benito counties. Laterals off of the main build or alternative routes on County roads will provide middle-mile infrastructure where most needed. For example, from South Morgan Hill to the southern Santa Clara County line, the largest regions that are underserved and unserved lie to the east of Highway 101. In addition, the current middle-mile infrastructure runs along Monterey Road, which lies on the west side of South Santa Clara County. Within San Benito County, it is our opinion that utilizing Highways 152, 129 and 156 instead of Highway 25 will significantly improve coverage and service delivery to those most in need. In addition, the state will be creating redundancy across county lines thereby significantly reducing the risk of a large-scale outage.
- **Redundancy and Resiliency:** LCB and SVI believes that it is in the best interest of the State to ensure redundancy and resiliency in the middle-mile network. To build a single path is a guarantee of an outage. We believe that alternative paths serving the same large geographic areas will enable Internet service providers to deliver a robust and reliable service to the end users.
- **Cybersecurity:** LCB and SVI also believe cybersecurity of the network should be considered and built into the network as a foundational matter.

#### **IV. Issues for Public Comment**

In response to specific questions posed by the Commission, LCB and SVI offer the following comments.

1. **Identifying Existing Middle Mile Infrastructure:**

- **What routes, if any, should be modified, removed from consideration, or revised? Provide an explanation for these suggestions.**

South Santa Clara and San Benito Counties have one provider of middle-mile infrastructure, a privately held corporation. This company's chokehold on the middle-mile market within this geography affords it a near "monopoly" in which it takes full advantage by pricing its middle mile very high.

Building middle-mile infrastructure purely along the highway system will not enable coverage of all of the underserved and unserved areas within the South Santa Clara and San Benito Counties. Instead, LCB and SVI recommend that laterals off of the main build or alternative routes on County roads will provide middle-mile infrastructure where most needed. From South Morgan Hill to the southern Santa Clara County line, the largest regions that are underserved and unserved lie to the east of Highway 101. In addition, the current middle-mile infrastructure runs along Monterey Road which lies on the west side of South Santa Clara County. Within San Benito County, it is our opinion that utilizing Highways 152, 129 and 156 instead of Highway 25 will significantly improve coverage and service delivery to those most in need. Additionally, utilizing these proposed routes would connect the interior of the State to the coastline, providing the State with additional routes and redundancy at a minimal cost. Communities that could benefit include Aromas, Pajaro, Watsonville and surrounding rural areas. Heading off of Highway 156, heading towards the Central Valley, there are many ranches on Pacheco Pass. They would greatly benefit from service extending over to Santa Nella.

LCB and SVI further urge the CPUC, the California Department of Technology (CDT) and the Third-Party Administrator (TPA) to engage in active and frequent dialogue with the local Internet service providers "on the ground" and the Rural Regional Broadband Consortia within each region to ensure that the needs of the local population are met. The ISPs and Consortia have substantial knowledge of the local situation in each region and can assist in the planning of a cost-effective route for the statewide middle-mile network.

- **Are there existing middle mile routes that are open access, with sufficient capacity, and at affordable rates on the county highway routes listed in Attachment A?**

The geographic footprint that LCB and SVI serve has only one open access middle-mile provider. The capacity of this company's network is limited. Further, it is our opinion that this company's pricing is quite high. With that being said, its middle-mile infrastructure is not on the County highway routes listed.

LCB and SVI believe that it is very important for the State to secure commitments from middle-mile providers and the new statewide middle mile network to maintain nondiscriminatory open access and affordable pricing for fiber paths being built with any State funds. Additionally existing middle-mile providers should be included in the dialogue. LCB and SVI believes that by working together on a common mission to resolve the Digital Divide, we will be able to utilize the state budget in the most cost-effective way and avoid waste.

- **In the context of these comments, what is sufficient capacity and affordable rates?**

The largest expense associated with any fiber build is the labor and the moving of the dirt. To utilize the states funds in the most responsible and cost-effective manner, LCB and SVI believe that pulling multiple conduits and very high strand count should be executed. In suburban areas close to larger cities, the statewide network should plan on placing three conduits along the path with no less than a 288-count fiber. Ideally, LCB and SVI recommend placing a 432-count fiber, which is a way to "future proof" this unique and critical state investment.

When building in more rural areas of the state, LCB and SVI recommends that two conduit and a fiber count not smaller than 72 strands should be used. The cost of additional strands is extremely low. Fiber is very inexpensive when compared to other costs associated with a middle mile network build. Also having extra fiber in the ground is a potential revenue stream for the State. Further, this fiber can be used for cost effective communications between state run agencies.

LCB and SVI consider “affordable rates” to be in the ballpark of \$1,000 per strand per mile for a typical twenty-year Indefeasible Right of Use (“IRU”). Shorter lease agreements may be necessary for some providers, but in our opinion the cost of a strand per mile should not exceed \$100 per mile per strand for a short-term lease. We define “short term” to mean five years or less.

- **For routes that are identified as being open access, with sufficient capacity, and at affordable rates, how should the Commission verify these claims (e.g., should Communications Division send a data request for service term sheets, rates, approximate dark fiber, lit fiber, and conduit capacity, etc.)? Are there any other criteria that should be used to verify these claims?**

Commission requests for term sheets and rates makes sense. These documents will make it easier for the State to confirm if providers are in alignment with the definitions set forth by the State. LCB and SVI at this time do not see a need for lit fiber services by the middle mile network.

**2. Priority Areas: Federal funding must be encumbered and spent in a limited time period. Additionally, unserved and underserved areas of the state are in substantial need of broadband infrastructure investment.**

- **Is it reasonable to assume counties with a disproportionately high number of unserved households (e.g., 50% or more unserved at 100 Mbps download) are areas with insufficient middle-mile network access?**

LCB and SVI do not agree with this assumption. Each geographic region should be looked at on its own merits. In addition, last-mile build outs can be very expensive in remote areas due to difficult terrain, weather challenges, and lack of population density.

- **What other indicators, if any, should the Commission use to identify priority statewide open-access middle-mile broadband network locations (i.e., built expeditiously, areas with no known middle-mile network access, regions underserved by middle-mile networks, regions without sufficient capacity to meet future middle-mile needs)?**

LCB and SVI believe that it is imperative that the State continue a dialogue with local Internet service providers, non-profits organizations associated with and or familiar with the Digital Divide problem, and the Regional Broadband Consortia. These organizations will give the State the best information about the existing middle mile and last time services available. It is crystal clear how urgent the need is for middle mile build-out to finish the State's statutory goal of 98% coverage of the state's population in all regions.

LCB and SVI agree that the first prior must be areas that totally lack middle mile, but the State must also weigh what kind of a return it will get on its investment as well, including the number of people or anchor institutions being served or potentially served by these build outs.

**3. Assessing the Affordability of Middle Mile Infrastructure: A key consideration is determining the cost of various middle mile services. Through identifying the costs of these services in California, as well as across the country and globe the Commission can identify a threshold whereby services can be considered reasonably affordable.**

- **What are existing providers paying or charging for middle mile services?**

LCB and SVI believe that there is a reason why these areas have not been built. That reason is cost. To look at the cost of existing infrastructure is not going to give you a good idea of what the new middle-mile IRUs and leases should be priced at. LCB strongly recommends utilizing the \$1000.00 per strand per mile for a 20-year IRU. This network must be affordable, or all of this will be in vain.

- **Are there other factors or sources of information the Commission should consider for determining whether these services are affordable?**



Input from primary customers such as local service providers and cellular carriers will be imperative to determine if the proposed pricing will enable these providers to build out their last mile network by leveraging the new middle-mile infrastructure.

- **Is it reasonable for the costs of these services to change depending on the location where the service is provided (i.e., rural vs. urban)?**

Absolutely! Certain areas may be harder to access, thus causing the cost of the build to be higher than others around the state. With that being said, the build areas with higher cost will be areas with a large amount of under and unserved population. It would be great if the state could offset the increase in cost by offering incentives to work in these areas.

4. **Leasing Existing Infrastructure: Indefeasible Rights of Use (IRUs) are long term leases (generally 20 to 30 years) for unrestricted, legal capacity on a communications network for a specified period of time.<sup>1</sup> These contracts generally obligate the purchaser to pay a portion of the operating costs, and the costs of maintaining the infrastructure.**

- **If there is existing open access communications infrastructure with sufficient capacity to meet the state's needs, should the state purchase IRUs from that network?**

No, ISP's can negotiate with existing provides on their own. With that being said it would help if the state would get commitments from existing operators to provide preferential rates that would be in line with rates offered on state owned middle-mile.

- **Is there any value in the state purchasing an IRU from the network if capacity is already available?**

LCB does not see any value in the state purchasing an IRU. Doing so would eliminate any chance of redundancy and future proofing. In our opinion an IRU is a short-term solution to a long-term problem and will cost the state and local providers a lot more in the long run.

- **If the state relies on IRUs for the development of the statewide network, will the generational investment that this funding provides be diminished when the IRU leases end 20 to 30 years later? Will existing networks run out of spare capacity?**

The answer is not as simple as yes or no; it all depends on how local Internet service providers integrate their networks with others. With that being said, looking at the serious lack of middle-mile facilities within the State and having dealt with the consequences of that shortage for many years, LCB and SVI cannot recommend that the statewide network rely solely on IRUs for the creation of the statewide middle mile network. It is our experience that there is not enough fiber in the ground around the State, particularly in rural and remote areas, but also in suburban areas. To pass up the opportunity to put new middle mile in places where it is needed would be imprudent.

**5. Interconnection: The statewide network will need to connect with other networks in order to deliver services.**

- **At what points should the statewide network interconnect (e.g., to other networks, servers, etc.)?**

LCB and SVI believe that the state network should interconnect at Carrier Hotels throughout the State and other strategic locations such as Network Operation Centers around the state. Examples are the Equinix Facilities around the San Francisco Bay Area, 55 Market in downtown San Jose, and South Valley Internet's Network Operations Center in San Martin, CA. All of these facilities have or should have redundant power supplies, multiple carriers, and the ability to collocate interconnection equipment.

- **Are additional exchange points necessary or strategic, and if so, where?**

The answer to this question depends on the design of the new statewide middle-mile network. With Data Centers and Carrier Hotels being predominantly in urban areas, LCB and SVI believe that the answer is yes. The State will need re-generation facilities

and additional interconnect nodes. Interconnection will be imperative in the more rural less suburban areas.

**6. Network Route Capacity: The state will need to determine the amount of capacity to build into the network to meet existing and future demand.**

- **How many strands of fiber should the network deploy for each route?**

Generally speaking, in rural areas LCB and SVI believe that no less than 72 strands should be deployed while 144 strands would be optimal. In more densely populated areas, a 288-strand of fiber should be considered the minimum with a 768-strand bundle being optimal. By way of explanation, when looking at the cost of deployment of a middle-mile network, the cost of fiber is a small percentage of the overall build cost. When looking at the increase in the cost of larger fiber bundles, the increase is so small that it makes sense to plan for unknown contingencies and for future uses. Again, the final numbers will be defined by the network design and engineering.

- **Are there other requirements or standards the Commission needs to consider to determine sufficient capacity?**

We cannot think of any.

- **Should the network also deploy additional conduit within each route for potential future expansion?**

Yes, the State should definitely deploy additional conduit within each route. The State should deploy no fewer than two conduits on any given route. These conduits can be used for future growth, replacement of damaged conduit, and as an additional revenue source for the State.

- **Should these factors change based on the population density and distance from the core network?**

LCB and SVI recommend that the State should not put in less than two conduits on any given route. The cost of additional conduit and the expense of pulling it through the ground will be a small percentage of the build cost.

Again, the main expense is in the labor and the actual moving of the earth. Additional conduit will not significantly increase the cost of either of these factors, but will help redundancy and resiliency.

The State must keep in mind that it is just not building for today's population and bandwidth demand, but the State's long-term future and the increasing bandwidth demands for a few decades.

WHEREFORE, LCB and SVI urge the Commission to consider its comments when deciding issues relating to the statewide middle mile network.

*/s/ Elise J. Brentnall*

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